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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,915	06/14/2006	Kye-Seong Kim	0070777-000022	7421

21839 7590 07/16/2008

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EXAMINER	
EPPS FORD, JANET L	

ART UNIT	PAPER NUMBER
1633	

NOTIFICATION DATE	DELIVERY MODE
07/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,915	KIM ET AL.	
	Examiner	Art Unit	
	Janet L. Epps-Ford	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-14* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The requirement for restriction mailed 7-01-08 is withdrawn, a new requirement for restriction is set forth below:

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Groups (a)-(q):

Group (a), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 1, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (b), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 2, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (c), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 3, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (d), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 4, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (e), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 5, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (f), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 6, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (g), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 7, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (h), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 8, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (i), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 9, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (j), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 10, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (k), claims 1-8, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 11, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (l), claims 1-8, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 12, the complement of said sequence, sequences having at least 80% identity to

said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (m), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 13, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (n), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 14, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (o), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 15, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (p), claims 1-14, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 16, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Group (q), claims 1-8, drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 17, the complement of said sequence, sequences having at least 80% identity to said sequence and nucleotide sequences which hybridize to said sequence; and further wherein said nucleic acid molecules are used as a marker for determining the differentiation of human stem cells.

Moreover, with the election of one of Groups (a)-(q) Applicants must also elect a single nucleic acid molecule from:

(1) SEQ ID NO: 84;
(2) SEQ ID NO: 85;
(3) SEQ ID NO: 86;
(4) SEQ ID NO: 87;
(5) SEQ ID NO: 88;
(6) SEQ ID NO: 89;
(7) SEQ ID NO: 90;

(8) SEQ ID NO: 91;
(9) SEQ ID NO: 92;
(10) SEQ ID NO: 93;
(11) SEQ ID NO: 94;
(12) SEQ ID NO: 95;
(13) SEQ ID NO: 96;
(14) SEQ ID NO: 97;
(15) SEQ ID NO: 98; or
(16) SEQ ID NO: 99;

3. The inventions listed as Groups (a)-(q) do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Groups (a)-(q) are drawn to multiple methods and products used in said methods, thus the claims are drawn to multiple categories of invention as defined in 37 CFR § 1.475(b). Therefore, the inventions of Groups (a)-(q) are considered to lack unity of invention as per 37 CFR 1.475 § (c), set forth below:

37 CFR § 1.475 Unity of invention before the International Searching Authority, the International Preliminary Examining Authority and during the national stage.

(a) An international and a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

(b) An international or a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

(1) A product and a process specially adapted for the manufacture of said product; or
(2) A product and process of use of said product; or
(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or
(4) A process and an apparatus or means specifically designed for carrying out the said process; or
(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

(c) If an application contains claims to more or less than one of the combinations of categories of invention set forth in paragraph (b) of this section, unity of invention might not be present.
(d) If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each of the other categories related thereto will be considered as the main invention in the claims, see PCT Article 17(3)(a) and § 1.476(c).
(e) The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

4. This international searching authority considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2, and 13.3) for the reasons indicated below:

5. According to the guidelines in Section (f)(i)(a) of Annex B of the PCT Administrative Instructions, the special technical feature as defined by PCT Rule 13.2 shall be considered to be met when all the alternatives of a Markush-group are of similar nature. For chemical alternatives, such as the claimed sequences, the Markush group shall be regarded as being of similar nature when

(A) all alternatives have a common property or activity and (B)(1) a common structure is present, i.e., a significant structure is shared by all of the alternatives or

(B)(2) in cases where the common structure cannot be the unifying criteria, all alternatives belong to an art recognized class of compounds in the art to which the invention pertains.

6. The instant sequences are considered to be each separate inventions for the following reasons: the sequences do not meet the criteria of (A), common property or

activity or (B)(2), art recognized class of compounds. Each member of the class cannot be substituted; one for the other, with the expectation that the same intended result would be achieved. Moreover, the sequences do not meet the criteria of (B)(1), as they do not share, one with another, a common core structure. Accordingly, unity of invention between the sequences set forth in the instant groups is lacking.

7. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

8. The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps-Ford whose telephone number is 571-272-0757. The examiner can normally be reached on M-F, 10:00 AM through 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Janet L. Epps-Ford/
Primary Examiner, Art Unit 1633